

Application No. 09/910,447
Amdt. Dated September 22, 2003
Reply to Office Action of June 23, 2003

Attorney Docket No. 81754.0064

REMARKS

Applicant appreciates the thorough examination of the application that is reflected in the Office Action dated June 23, 2003. To expedite the prosecution of this application, claims 33, 37 and 41 are canceled without prejudice. Claims 1, 3, 4, 9, 11, 21, 23, 24, 29, 31, 32, 34, 36, and 38 are amended to correct typographical errors and to correct a translation error by changing the term "formed" to "disposed" throughout these claims. In addition, in claims 34 and 38, the phrase "at least a portion" has been changed to "a majority." New claims 44-63 are added to recite additional features that are not taught or suggested by the cited references. Claims 1-4, 7, 9, 11, 21-24, 28, 29, 31, 32, 34-36, 38-40, 42, and 43-63 are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

Claim Rejections Under 35 U.S.C. 112, 2nd Paragraph

Claims 33, 37 and 41 were rejected under 35 U.S.C. 112, second paragraph.

To expedite the prosecution of this application, claims 33, 37 and 41 have been cancelled. Accordingly, Applicant submits that the rejection of claims 33, 37 and 41 under 35 U.S.C. 112, second paragraph is moot and should be withdrawn.

Claims 1, 21, and 32

Claims 1-4, 7, 9, 32, 34-36 and 42-43 were rejected under 35 U.S.C. 102(b) as being anticipated by USPN 6,528,847 Liu (hereinafter "Liu") and claims 11, 21-24, 28-29, 31, and 38-40 were rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of USPN 6,214,679 to Murthy et al. (hereinafter "Murthy").

Applicant submits that the cited references fail to teach or suggest all of the recitations of independent claims 1, 21 and 32. The cited references all fail to teach or suggest, for example, that "the gate electrode has a width that gradually increases from a bottom thereof up to an upper surface thereof," as required by each of the independent claims.

As shown, for example, in FIG. 1M of the Liu reference, the structure that includes the polysilicon gate 36 and the polycide region 56 does not increase in width once the polysilicon gate 36/polycide region 56 contacts the spacers 60, but instead maintains a constant width in the portion from just below the spacer 60 to the upper surface of the polysilicon gate 36/polycide

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region 56. Thus, the width of the gate electrode in Liu does not gradually increase "from a bottom thereof up to an upper surface thereof," as required by each of the independent claims.

The Murthy patent fails to address these deficiencies of the Liu patent.

For at least the foregoing reasons, Applicant therefore respectfully submits that each of independent claims 1, 21 and 32 are patentable over the cited references. Applicant also submits that dependent claims 2-4, 7, 9, 11, 35, 36 and 44-50; 22-24, 28, 29, 31, 38-40 and 51-55; and 34, 42-43 and 56-63 are patentable at least by virtue of their dependency from claims 1, 21 and 32, respectively. In addition, Applicant submits that many of the dependent claims are separately patentable since those claims recite other limitations that are not taught or suggested by the cited references. For example, dependent claims 34, 38 and 63 require "a majority of the gate electrode is above the semiconductor substrate, and the first and second impurity diffusion layers." Applicant submits that the cited references fail to teach or suggest this limitation. Dependent claims 36, 40 and 43 require that "the extension regions of the first and second impurity diffusion layers are below the sidewall dielectric layer, and wherein an area below the gate dielectric layer is free of the extension regions." Applicant submits that the cited references also fail to teach or suggest this limitation.

Independent Claim 21 and Dependent Claim 11

Independent claim 21 and dependent claim 11 both require that the "surface of the first and second impurity diffusion layers are formed at a position higher than a surface of an element isolation region." Applicant submits that although the Murthy reference apparently teaches this limitation there is no motivation, absent impermissible hindsight reconstruction, to modify the Liu reference to include this feature. Modifying Liu in this manner would require a complete redesign of the fabrication process set forth in Liu. Thus, Applicant submits that independent claim 21 is patentable over the cited references, and dependent claims 11 is separately patentable over the cited references, for at least his additional reason.

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Independent Claim 32

Claim 32 also requires that "a width of the upper surface of the gate electrode substantially equals the width of the groove." Applicant submits that the Liu reference also fails to teach or suggest this limitation since as shown in FIGS. 1D and 1M of Liu, the width of the upper surface of the polysilicon gate 36/polycide region 56 is less than the width of the surface 26 by an amount equal to the thickness of the gate dielectric layer that is interposed between the substrate 12 and the polysilicon gate 36. For at least this additional reason, Applicant submits that claim 32 is also patentable over the cited references.

New Dependent Claims

New dependent claims 44-62 are added by this amendment. Applicant submits that the cited references fail to teach or suggest the limitations of these claims. Accordingly, these claims are separately patentable.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.


If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6742 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,

HOGAN & HARTSON L.L.P.

By:


Anthony J. Orler

Registration No. 41,232

Attorney for Applicant(s)

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500 South Grand Avenue, Suite 1900
Los Angeles, California 90071
Phone: 213-337-6700
Fax: 213-337-6701